

Montana Fish, Wildlife & Parks

INSIDE
TRACKS

The Newsletter of Region One

Volume 7, No. 3

Summer 1997

STATE DOCUMENTS COLLECTION

OCT 03 1997

Special Flathead Lake Fisheries Issue

Be sure to see the explanatory charts on pages 3 and 4!

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Expert Panel Will Help Guide Flathead Lake Fish Management

The ecology of Flathead Lake has literally been turned upside down.

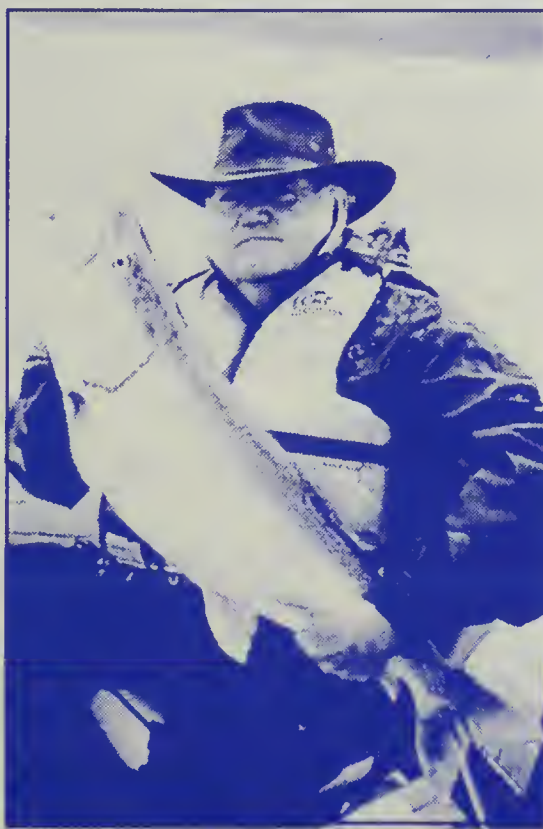
The west's largest freshwater lake was once dominated by shallow water or shoreline fish like westslope cutthroat and bull trout, then kokanee salmon after they were introduced in 1916. But in large part because of Mysis Shrimp, established in the 1980s, bottom dwelling lake trout and lake whitefish now dwarf the numbers of other fish in anglers' catches.

Why are the deep water fish thriving? Mysis avoid sunlight, so they remain near the lake bottom during the day. Thus, these dime-sized shrimp are not available to shallow water fish which find their food by sight. But at night, the shrimp rise up into the upper water column of the lake and feed on tiny crustaceans, the same food used by kokanee and to some degree, by cutthroat and other fish. So the shrimp compete with these fish for food, yet because of their habits, the shrimp do not provide food for fish like kokanee.

Bottom fish on the other hand, like lake trout and lake whitefish, can gobble the shrimp in the depths of the lake during the day. These fish have experienced excellent survival and their populations have boomed. The sharp increase in the number of the highly predacious lake trout has led to a crash in kokanee populations, and decreases in westslope cutthroat and bull trout.

FWP Fisheries manager Jim Vashro explains that there are a num-

ber of options for managing the lake. The present world-class lake trout fishery is very popular, but the lake trout



BIG LAKE TROUT! Angler Jerry Howard is happy with his monster lake trout caught during the June 11 Fishing Without Barriers Day on Flathead Lake. Lake trout are now the major sport fish caught by anglers on the lake.

may eventually eliminate bull trout, and perhaps cutthroat trout, from the lake. Reducing the lake trout numbers by lifting fishing limits or more extreme measures such as commercial fishing might help bull trout and cutthroat, but would eliminate the lake's

major fishery which is depended upon by sport anglers, charter boats, and associated businesses.

Flathead Lake Fisheries Biologist Mark Deleray says that the lake trout fishery in Flathead Lake has become more popular as people have learned to catch them. Smaller lake trout (5 pounds or less) are excellent eating, with red-colored meat. The public may (Cont. on Page 2)

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PLEASE HELP YOURSELF

Expert Panel Will Help Guide Flathead Lake Fish Management

(Cont. from Page 1)

not support reducing the lake trout population for uncertain benefits to native fish species. But Deleray adds that bull trout are currently proposed for listing by the U. S. Fish and Wildlife Service as threatened under the Endangered Species Act, which could mandate further protection for the Flathead Lake population.

Because of the complexities of this management dilemma, FWP and the Confederated Salish and Kootenai Tribes, the two agencies which co-manage the lake, have begun assembling a panel of fisheries experts to give advice on management strategies for the lake's fishery. Vashro says that the panel is modeled after a similar scientific effort which provided advice to Yellowstone National Park on the illegal introduction of lake trout into Yellowstone Lake.

The panel, scheduled to convene this fall, will be made up of researchers and managers from across the U. S. and Canada who have worked with lake trout, bull trout, and fish interactions. The effort is being coordinated through Governor Marc Racicot's bull trout restoration team. The panel will

work with the large database assembled on Flathead Lake fisheries, and provide opinions on the future outlook for the lake's fishery and a range of man-

agement options. Their report, as well as input from anglers and the general public, will help guide future fisheries management for Flathead Lake.



ON THE INCREASE. Flathead Lake Fisheries Biologist Mark Deleray examines a lake trout caught in a sinking gill net in Flathead Lake. Lake trout catches in gill nets have increased more than 10-fold in the past decade, reflecting the boom in the lake trout population.

Why Were Mysis Shrimp Introduced to the Flathead System?

In a peculiar quirk of nature, a small crustacean which helped kokanee reach 5 pounds in British Columbia's Kootenai Lakes caused kokanee crashes in other lakes across the west.

Fisheries managers in Canada watched kokanee salmon reach lunger size in Kootenai Lakes when Mysis Shrimp were introduced into the system. Because of this apparent success, fisheries agencies across the west introduced the shrimp into more than 100 kokanee lakes, hoping for similar results. For the most part, the results were negative rather than positive.

Researchers later found that kokanee in Kootenai Lakes were able to eat the shrimp because of a unique upwelling current, which brought Mysis to the upper layers of the lake

during the day. But in other deep lakes, like Whitefish and Flathead, the shrimp remained on the bottom during the day, unavailable to the shallow, sight-feeding kokanee. To make matters worse, the shrimp rose to the shallows during the night and ate the same tiny crustaceans that the kokanee ate. And to compound the problem even more, Mysis increased the survival of deep-dwelling fish like lake trout, which in turn preyed on kokanee.

FWP introduced Mysis into Swan and Whitefish lakes in the late 1960s and early 1970s before these problems became apparent. The shrimp found its way to Flathead Lake and became established in the 1980s. Because of the lack of ecological understanding about the shrimp's habits, the well-meaning introductions backfired.



THE MYSIS SHRIMP, a dime-size crustacean, has caused shifts in fish populations where it's been introduced. It has one of the most unique life cycles of any aquatic creature.

Efforts to Reintroduce Kokanee Fail Despite Strong Effort

As part of the Hungry Horse Dam mitigation program, FWP, the Confederated Salish and Kootenai Tribes, and the U.S. Fish and Wildlife Service have been involved in a 5-year effort to reestablish kokanee in Flathead Lake. In the past, kokanee were reduced because of dam operations, overfishing, and predation. The cooperators have agreed that the recent reintroduction effort has not been successful because of heavy predation by lake trout, and will be ended after this year.

Three criteria were established to measure success:

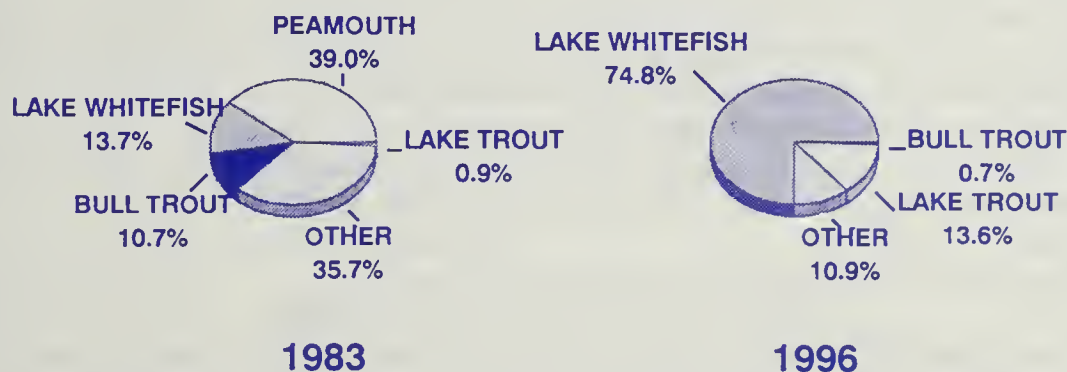
- 1) Survival of 30 percent of stocked kokanee one year after stocking;
- 2) Survival of 10 percent of the planted kokanee to adults;
- 3) Annual harvest of 5 percent of stocked kokanee by anglers.

The program fell far short of meeting these criteria. Only a limited number of kokanee survived the gauntlet of lake trout predation. For example, in 1994, it was estimated that lake trout ate about one-third of the 800,000 stocked kokanee within the first eight weeks.

The experiment showed that kokanee could not be reestablished in the lake even with the stocking of nearly 4 million yearling fish over a five-year period. During the experiment, the Creston National Fish Hatchery developed useful techniques to develop a kokanee brood stock, and to raise large numbers of kokanee to yearling size (5-9 inches). These developments will be used in other areas to aid kokanee production.

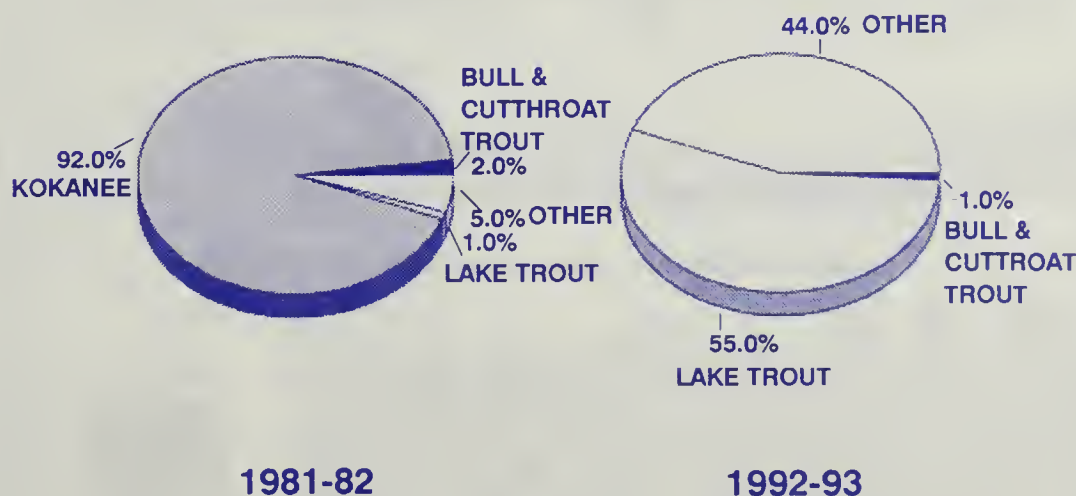
The mitigation effort will be redirected to other fish species, including native westslope cutthroat trout, and to smaller lakes where popular fisheries can be developed.

% FISH SPECIES COMPOSITION IN FLATHEAD LAKE SPRING SINKING GILL NETS



PERCENT FISH SPECIES composition in sinking gill nets, Flathead Lake. Note the major increase in bottom dwelling lake trout and lake whitefish after Mysis became established.

PERCENTAGE OF FISH HARVESTED FLATHEAD LAKE



PERCENTAGE OF FISH HARVESTED by anglers, Flathead Lake, pre mysis/post mysis. Lake trout catch increased from 1 percent to 55 percent of the catch.

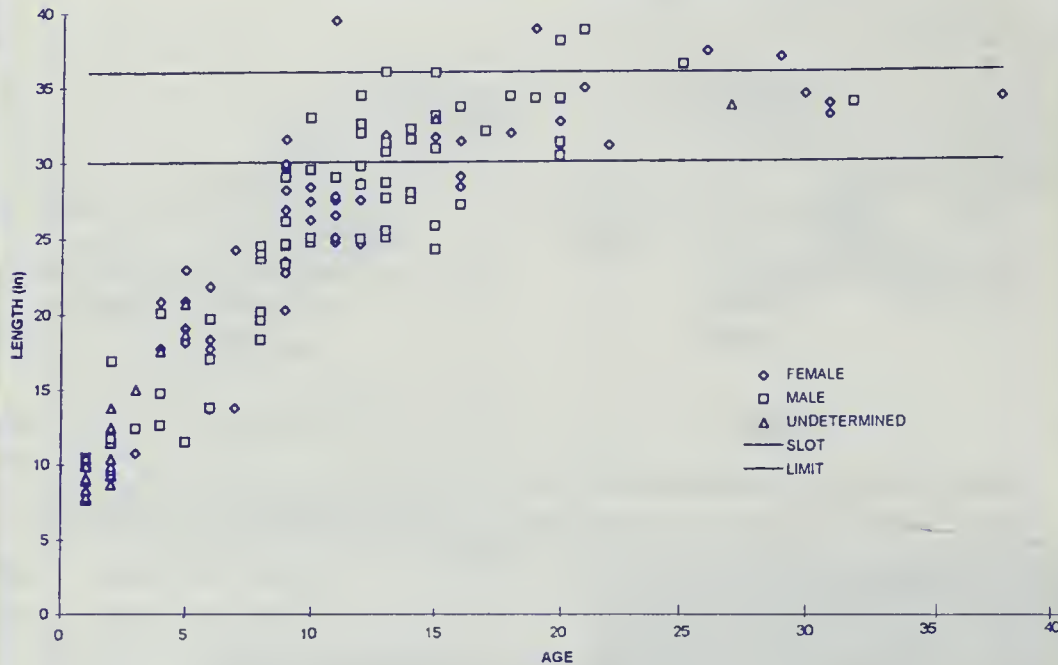
Flathead Lake Fish Species

Of the 22 fish species in Flathead Lake, only 12 are native.

NATIVE	NON-NATIVE	DATE INTRODUCED
Bull Trout	Lake Trout	(1905)
Westslope Cutthroat Trout	Lake Whitefish	(1909)
Mountain Whitefish	Kokanee Salmon	(1916)
Pygmy Whitefish	Yellow Perch	(1910)
Longnose Sucker	Northern Pike	(1960s — Illegal)
Largescale Sucker	Rainbow Trout	(1914)
Northern Squawfish	Eastern Brook Trout	(1913)
Peamouth Chub	Largemouth Bass	(1898)
Redside Shiner	Pumpkinseed Sunfish	(1910)
Sculpins (3 species)	Black Bullhead	(1910)

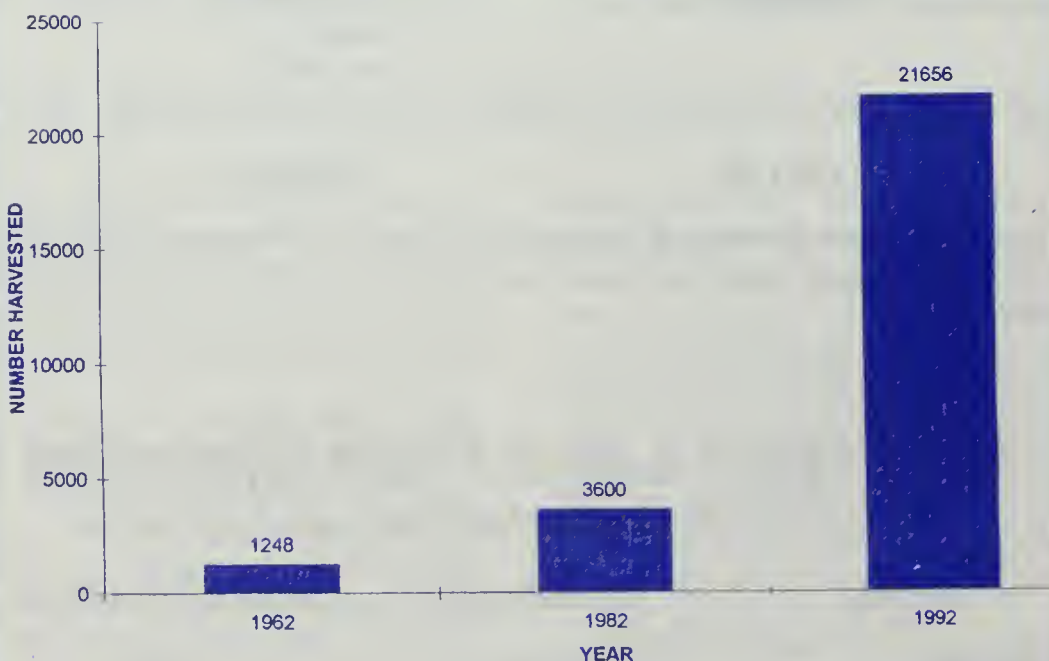
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LENGTH AND AGE FOR LAKE TROUT, FLATHEAD LAKE

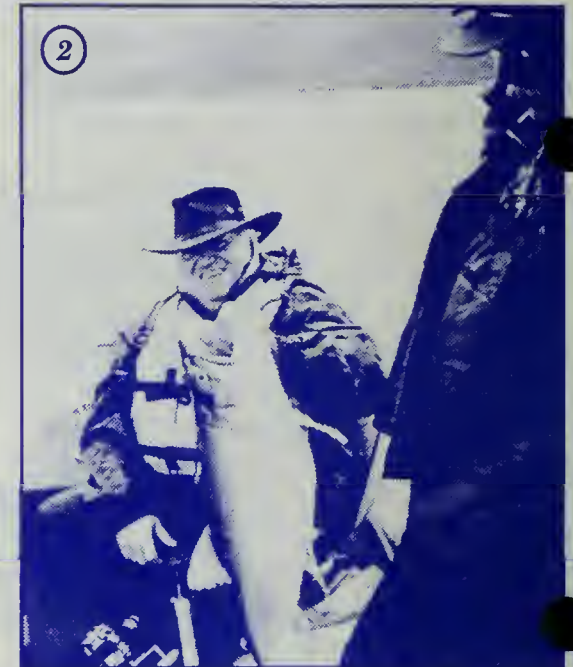


LAKE TROUT GROWTH in Flathead Lake: It takes a long time for lake trout to grow to trophy size. Fish 30-36 inches in length must be released if caught by anglers. This "slot limit" is designed to protect the population for reproduction, and to ensure that a percentage of the fish reach trophy size.

ESTIMATED NUMBER OF LAKE TROUT HARVESTED IN FLATHEAD LAKE



NUMBER OF LAKE TROUT harvested, Flathead Lake, pre and post Mysis. The large increase in harvest reflects the boom in the lake trout population after the establishment of Mysis Shrimp.



•1. **CHARTERBOAT CAPTAIN JIM LANDWEHR** fillets one of the lake trout for the post-fishing barbecue. Smaller lake trout from Flathead Lake have red flesh and are excellent eating.

•2. **JERRY HOWARD** shows off a 16-pound lake trout he caught while guide Jim Vashro looks on during the Fishing Without Barriers Day, held June 11 on Flathead Lake. Anglers caught 24 lake trout ranging from one-pound up to Howard's lunger.

•3. **TWELVE-YEAR-OLD MATT SATHER** shows the 4-pound lake trout he caught on the outing. Matt caught one of the biggest fish at last year's event.

•4. **SHORTY GOGGINS** of A-Able Fishing works to get the anglers into a big one. Shorty's boat has been an important part of the event because it can host up to eight anglers.

•5. **DAVE MINISTER** removes the hook from a fish caught by one of the anglers. Minister has hosted anglers on all four Fishing Without Barriers days.

•6. **MIKE PITZEN** of Glacier Fishing Charters resets downriggers while the anglers on board his boat display their fish.

— to Fishing Without Barriers Cooperators

Despite rainy weather, the fourth annual Fishing Without Barriers Day on Flathead Lake was a great success. More than 30 anglers with disabilities caught 24 lake trout and enjoyed a picnic and fish fry. Anglers ranged in age from 9 to 75 years and hailed from around the Flathead Valley, Polson, and Missoula.

FWP's Crossing the Barriers Committee would like to extend thanks to the following cooperators who made the event possible:

- Jim Landwehr of the Montana Charterboat Association and Glacier Fishing Charters arranged for the charterboat captains. Members who hosted anglers included: Landwehr and Mike Pitzen of Glacier Fishing Charters; Shorty Goggins of A-Able Fishing; Jerry Landskrum of Woods Bay Charters; Rusty Cornett of A-1 Charters; Dusty Bagley of Bagley Guide Service; and private boat operators Dave Minister and Jim Vashro.

- Jim Tebay of the Woods Bay Marina donated the use of

boat launch and picnic facilities.

- A number of Crossing the Barriers Committee members organized the post-fishing picnic which included fried lake trout. Jerry Howard arranged for food and drink donations from a large number of merchants from around the valley, including: Fun Beverage; Super 1 Foods; Kalispell Ice Plant; Buttreys; Tidyman's; Fred Meyer B & B; Eddies Bread; Costco, and others. Marty Watkins, Bob and Wanda Worley did the cooking; Jim Landwehr and Bob Domrose cleaned the fish.

As usual, the anglers had praise for the charterboat captains who made the event possible.

"I don't know how to thank them," said Mel Smart of Kalispell. "It's the only chance I get to go out fishing."



Kids' Fishing Day Draws 400 Youngsters and Adults

About 250 anglers age 12 and under took part in the annual kids' fishing day at McGilvray Lake. The kids caught about 100 rainbow trout and many perch and pumpkinseed sunfish.

The event, held June 7 in celebration of National Fishing Week, was sponsored by Bigfork American Le-

gion Post 86, the U. S. Fish and Wildlife Service, Creston National Fish Hatchery, the U.S. Forest Service, and Montana Fish, Wildlife & Parks.

Prizes and materials were donated by many area merchants. The event has become the best-attended fishing day in northwest Montana.

Youngsters also toured a number

of educational displays, took part in a casting contest, and visited the hot dog and drink stand. The sunny weather helped make the event fun for everyone.

A YOUNG ANGLER (right photo) shows the 11-inch rainbow trout he caught at the June 7 Kids' Fishing Day at McGilvray Lake.

THE WHOLE FAMILY (left photo) got involved with this catch of four nice rainbows.



Think Safety During the Coming Hunting Season

By Dale Sommerfield

When the general hunting season closed last year it seemed like forever until it would be here again, but it's coming soon. For example, the mountain grouse and archery seasons begin in a little over a month.

With the coming of hunting season, a lot of us will pair up with a partner to go hunting. We might go with a father, a son, a daughter, an uncle or a good friend. It is safer to hunt with a partner, and it can make hunting more enjoyable.

We'll pick up our partner early in the morning and he'll load his lunch, coffee thermos, extra clothes and other gear. Then he'll load his rifle, and that's when it happens. This little voice inside you says, "I wonder if that gun is loaded?"



SAFETY FIRST. Dale Sommerfield is a FWP Citizen Advisor and a Hunter Education Instructor. Here he instructs a student in blackpowder shooting at a hunter education field course. Dale is concerned that not enough notice is given to gun safety in and around vehicles.

Or it may happen when you are loading or unloading your rifles in the gun rack behind the seat. You are on opposite sides of the truck, trying not to point your rifles at each other. Noth-

ing is said because it's kind of an uncomfortable moment. You wouldn't want to insult your partner by accusing him of being unsafe, right? Wrong!

Next time, try saying this, "Hey partner, is your gun unloaded", or, "Hey partner, I'll get out of the way while you get your gun into (or out of) the truck." It's very simple, and your partner won't be insulted. In fact, he'll be glad that you reminded him to be safe. Next time he may be reminding you and you'll both be glad to have a partner who knows how important

it is to look out for one another.

A significant number of hunting accidents occur around vehicles. By using common sense, these accidents can be avoided.

Perry Brown Receives Award for Top Montana Game Warden

Columbia Falls Warden Perry Brown received the coveted award for Montana's top game warden at FWP's recent state law enforcement workshop in Billings. The annual award is presented by the Shikar Safari Club International in recognition of meritorious service in the field of wildlife conservation and law enforcement.

"This is the most prestigious award a game warden can receive," said Region One Warden Captain Ed Kelly. "Perry has done a terrific job and the award is recognition of that."

Brown was recognized for his help in using the computer system to develop a statewide wildlife case reporting system. He has been key in FWP's warden training program. Brown has also excelled as the back country warden for the west side of the Bob Marshall Wilderness Complex. Most of all, he has gained the trust of the public in his district who recognize his hard work and sacrifice for the wildlife resource.

"Perry can be counted on at any time of the day or night," Kelly said. "People in his district know that he is always fair and helpful." 🐾



CELEBRATION. Warden Captain Ed Kelly (left) and Region One Supervisor Dan Vincent (right) help Columbia Falls Game Warden Perry Brown celebrate his Shikar-Safari Award. The award is given annually by the international club to Montana's top game warden.

Montana Wildlife Federation Awards Go to Locals

Three local conservation workers received prestigious Montana Wildlife Federation Awards for 1996.

Dan Atkinson, Lead Hunter Education Instructor in the Kalispell area, received the Federation's Conservation Educator of the Year award. Atkinson was recognized for his tireless volunteer efforts for hunter education, his role in the development of the new Montana Hunter Education Manual, and his promotion of the new mobile Hunter Education Shooting Center.



AWARD. Dan Atkinson and FWP Region One Supervisor Dan Vincent were happy with Atkinson's Conservation Educator Award.

Warren Lamoreaux received the Federation's Special Achievement Award for his work on behalf of wildlife conservation through Flathead Wildlife, Inc. Lamoreaux donated thousands of hours constructing bird houses to raise money for wildlife habitat.

FWP's John Grant received the Federation's Wildlife Professional of the Year award. Grant was recognized for his excellent work as manager of Ninepipe Wildlife Management Area.

Congratulations to these deserving folks! 🐾



RECOGNITION WELL DESERVED. Wildlife Biologist John Grant was recognized for his hard work to help waterfowl and other species.



FLATHEAD WILDLIFE, INC. President Bob Cole and Special Achievement Award recipient Warren Lamoreaux have worked together on many projects.

Clean Water Tips for Lakeshore Owners

By John Wachsmuth, FWP Volunteer Lake Monitoring Coordinator

In working the past 3 years with volunteer lake monitors and various lake associations throughout northwestern Montana, I have received many calls and questions concerning things people can do to protect their lakes and streams.

One area that many lake associations around the country are addressing is decreasing the use of fertilizers on lawns around lakeshores.

Lawn care chemicals have been identified in US studies as major pollutants causing eutrophication in lakes with extensive lakeshore development. Eutrophic lakes have excessive weed growth, algal blooms, sometimes offensive odors and fish kills because too many nutrients get into the lake.

Phosphorus, a common ingredient of garden fertilizers, is the main culprit. When it is improperly applied, phosphorus gets into the lake water either directly or in stormwater runoff and can lead to accelerated lake

eutrophication. Once in the lake, phosphorus is almost impossible to remove.

To insure that your gardening habits are not contributing to pollution of your lake, consider the following tips, which should help minimize phosphorus transfer from your property into the lake.

•1. Consider not fertilizing at all. Use native plants instead of lawn or, if you keep a lawn, mulch grass clippings and distribute them over the lawn. Clippings contain valuable phosphorus your lawn needs to replace itself. Recycle nutrients and save money and your lake.

•2. If you fertilize, do so only when you need to. Use only low phosphorus fertilizer where the middle number on the bag is less than 3. For liquid fertilizer, the phosphorus content should be less than 1/2% expressed as P_2O_5 . Have your soil tested by a reputable lab and consult your agriculture office to select the most appropriate fertilizer for your particular soil and gardening needs.

•3. Do not apply fertilizer to frozen ground, impervious surfaces, areas within drainage ditches or waterways or within 10 feet of a lake or wetland. Don't fertilize to the edge of the lake.

•4. Clean up fertilizer spillage, especially on sidewalks, streets and driveways.

•5. Minimize lawn irrigation. Apply only as much water as can be taken up by vegetation without creating runoff. Runoff water will carry soluble nutrients, as well as soil particles and decaying plant material, into the lake where they stimulate algal and aquatic plant growth.

•6. Don't dump leaves or grass clippings in ponds, ditches, or places where they can contribute nutrients to runoff waters.

•7. Maintain vegetative cover on land, especially along the lakeshore, to avoid excessive erosion and to intercept sediment and nutrient runoff to the lake.



For more information on Fish, Wildlife & Parks issues, listen to:
"Northwest Outdoors,"
FWP's weekly radio show, Thursdays at 8:35 a.m.
on KGEZ, 600 AM.

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